

REMARKS

The Amendments

Claims 1-33 are pending. Claims 34-135 are withdrawn. Claim 30 is amended to recite "wherein in the top layer everything but the nanostructure has been etched away". Support for this amendment is found in the specification, for example, in page 14, line 21 to page 15, line 2. No new matter is added by the amendment.

The Response

Objection Under 37 CFR 1.75(c)

Claim 30 is objected to under 37 CFR 1.75(c), as being allegedly of improper dependent form for failing to further limit the subject matter of a previous claim. In light of the amendment of Claim 30, Applicants respectfully request the Examiner to withdraw this objection.

Rejections Under 35 USC § 102

Claims 1, 10-14, 17, 22-24 and 30 are rejected under 35 U.S.C. 102(b) for allegedly being anticipated by Linliu et al. (U.S. Patent No. 6,110,837). Applicants respectfully respectfully traverse this rejection.

MPEP § 2131 states "a claim is anticipated only if each and every element set forth in the claim is found, either expressly or inherently described, in a single prior art reference", citing *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631. See also MPEP § 2131.02. "The identical invention must be shown in as complete detail as is contained in the ... claim" citing *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236.

Claim 1 is directed to a method of fabricating a nanostructure array comprising: providing a substrate having a top layer, depositing a sacrificial layer having a first etching characteristic, patterning the sacrificial layer, forming a thin conformal layer having a second etching characteristic over the patterned sacrificial structure, wherein the first and second etching characteristics are different, anisotropically etching the conformal layer to create a pattern, removing the sacrificial layer, **transferring the resulting conformal layer structure to the substrate by etching**, and removing any remaining conformal layer structure, thereby creating at least one nanostructure in the top layer. Claims 10-14, 17, 22-24 and 30 depend from Claim 1.

Linliu et al. disclose a method of forming structures consisting of a silicon oxide layer 130 over a polysilicon layer 120 that is on the surface of a gate oxide layer 110 which in turn is over a semiconductor substrate 100 (see Figure 8). Linliu et al. disclose removing the polymer layer 210 and polymer layer 220 to form the structures consisting of the silicon oxide layer 130 (col. 5, lines 27-35). However, it can be clearly seen by comparing Figures 6 and 7 that removing polymer layers 210 and 220 does not transfer the resulting structure of polymers layer 210 and 220 to the substrate.

Since Linliu et al. do not teach the step of **transferring the resulting conformal layer structure to the substrate by etching**, Linliu et al. do not teach each and every claim element of Claims 1, 10-14, 17, 22-24 and 30. As such, Linliu et al. fail to anticipate these claims under 35 U.S.C. §102(b). Accordingly, Applicants respectfully request the Examiner to withdraw this rejection.

Claims 1-4 and 6-33 are rejected under 35 U.S.C. 102(e) for allegedly being anticipated by Pontis et al. (U.S. Patent Application Pub. No. 2004/0136866).

Applicants respectfully respectfully traverse this rejection.

MPEP § 2131 states "a claim is anticipated only if each and every element set forth in the claim is found, either expressly or inherently described, in a single prior art reference", citing *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631. See also MPEP § 2131.02. "The identical invention must be shown in as complete detail as is contained in the ... claim" citing *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236.

Claim 1 is directed to a method of fabricating a nanostructure array comprising: providing a substrate having a top layer, depositing a sacrificial layer having a first etching characteristic, patterning the sacrificial layer, forming a thin conformal layer having a second etching characteristic over the patterned sacrificial structure, wherein the first and second etching characteristics are different, anisotropically etching the conformal layer to create a pattern, removing the sacrificial layer, transferring the resulting conformal layer structure to the substrate by etching, and removing any remaining conformal layer structure, thereby creating at least one nanostructure in the top layer. Claims 2-4 and 6-33 depend from Claim 1.

Pontis et al. disclose a method of forming structures consisting of nanowire elements 626 and 628 on the surface of a silicon oxide insulation layer 604 which in turn is over a bulk silicon substrate layer 606 (see Figure 6, specifically Figure 6L). Comparing Figure 6B and 6L, it is clear that the nanowire elements 626 and 628 (see

Figure 6L) are not created from the top layer of the substrate which is nitride layer 608 (see Figure 6B).

Since Pontis et al. do not teach creating at least one nanostructure in the top layer, Pontis et al. do not teach each and every claim element of Claims 1-4 and 6-30. As such, Pontis et al. fail to anticipate these claims under 35 U.S.C. §102(e). Accordingly, Applicants respectfully request the Examiner to withdraw this rejection.

Rejections under 35 USC § 103

Claim 5 is rejected under 35 U.S.C. 103(a) for allegedly being obvious over Pontis et al.

MPEP 2144.03 (A) states: It would not be appropriate for the examiner to take official notice of facts without citing a prior art reference where the facts asserted to be well known are not capable of instant and unquestionable demonstration as being well-known. For example, assertions of technical facts in the areas of esoteric technology or specific knowledge of the prior art must always be supported by citation to some reference work recognized as standard in the pertinent art. *In re Ahlert*, 424 F.2d, 1091. See also *In re Grose*, 592 F.2d 1161, 1167-68.

Claim 5 depends from Claim 1 and is directed to a method of fabricating a nanostructure array of claim 3, wherein: the nanostructure comprises Si, and the reduction in dimension is accomplished by controlled XeF₂ etch.

For the reasons provided earlier, Pontis et al. do not teach creating at least one nanostructure in the top layer. Also, as Pontis et al. disclose a method of forming

nanowire elements 626 and 628 from a layer that is not the top layer of the substrate, Pontis et al. teach away from, and thus do not suggest, this claim element.

Furthermore, Applicants respectfully point out that the Examiner has not provided a prior art reference that teaches or suggests the claim element of **the reduction in dimension is accomplished by controlled XeF₂ etch**. Applicants respectfully assert that it is not appropriate for Examiner to not cite a prior art reference that teaches or suggests this claim element.

As Pontis et al. do not teach or suggest each and every claim element of Claim 5, Pontis et al. fail to render Claim 5 obvious under 35 U.S.C. §103(a). Accordingly, Applicants respectfully request the Examiner to withdraw this rejection.

CONCLUSION

In view of the foregoing remarks and amendment, Applicants respectfully submit that all of the claims are in condition for allowance, which action is requested. If in the opinion of the Examiner, a telephonic conference would expedite the prosecution of the subject application, Applicants encourage the Examiner to call the undersigned at (510) 486-4534.

If any further fee is required to maintain pendency of this application, the Commissioner is authorized to charge any necessary and additional fees, including fees for additional extensions of time that may be due to Deposit Account No. 120690, referencing Attorney Docket: IB-1997.

Respectfully submitted,

Dated: May 17, 2011

By: /Robin C. Chiang/
Robin C. Chiang, Ph.D.
Reg. No. 46,619

Lawrence Berkeley National Laboratory
One Cyclotron Road, MS 56A120
Berkeley, CA 94720
Telephone: (510) 486-4534
Facsimile: (510) 486-7896